UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,695	11/21/2003	Leong Ng	ISA-012.01	1345

63767 7590 07/11/2007

FOLEY HOAG, LLP
PATENT GROUP (w/ISA)
155 SEAPORT BLVD.
BOSTON, MA 02210-2600

EXAMINER
ROONEY, NORA MAUREEN

ART UNIT	PAPER NUMBER
1644	

MAIL DATE	DELIVERY MODE
07/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/719,695	NG, LEONG	
	Examiner	Art Unit	
	Nora M. Rooney	1644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8,10-17 and 22-25* is/are pending in the application.

4a) Of the above claim(s) *22-25* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 10-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's amendment filed on 05/21/2007 is acknowledged.

2. Claims 1-8, 10-17 and 22-25 are pending.

3. Claims 22-25 are withdrawn from further consideration by the Examiner, 37 C.F.R. § 1.142(b) as being drawn to nonelected inventions.

4. Claims 1-8 and 10-17 are currently under examination as they read on a method for detecting tissue hypoxia.

5. In view of the amendment filed on 05/21/2007, only the following rejections are maintained.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 8 and 10-17 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention for the same reason as set forth in the Office Action mailed on 11/16/2006.

Applicant's arguments filed on 05/21/2007 have been fully considered, but are not found persuasive.

Applicant argues that claim amendments have obviated this rejection.

It is the Examiner's position that claim 8 and claims dependent thereupon lack a contact step for the detection of a natriuretic peptide in the bodily fluid sample. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

8. The following is a quotation of the first paragraph of 35 U.S.C. § 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 1-8 and 10-17 stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement because the specification, while being enabling for: a method for detecting tissue hypoxia in a mammalian subject comprising contacting a bodily fluid sample of said subject with anti-ORP 150 antibody and determining the level of ORP 150 protein (SEQ ID NO:2) in said bodily fluid sample, including plasma, whereby an elevated level of ORP 150 relative to normal is indicative of an increased risk of heart disease that is the result of heart failure, chronic heart failure, coronary artery disease, ischaemic cardiomyopathy, myocardial infarction atherosclerosis, ischaemic stroke, aortic aneurysm or peripheral vascular disease; the method using lateral flow immunoassay or flow-through immunoassay with monoclonal antibodies specific for ORP 150; the method for detecting tissue hypoxia in a mammalian subject further comprising detection the BNP or N-BNP second marker in a bodily fluid sample of a mammal, including plasma, whereby an elevated level of the second marker is indicative of heart disease using lateral-flow immunoassay or flow through immunoassay; and the method for detecting tissue hypoxia in a mammalian subject wherein ORP 150 and/or the second marker are

monitored periodically, does not reasonably provide enablement for: a method for detecting tissue hypoxia in a mammalian subject by contacting a bodily fluid sample with an antibody specific for an oxygen related protein 150 (ORP 150) comprising SEQ ID NO: 2 **or an immunoreactive fragment thereof** in order to detect the level of ORP 150 in the bodily fluid sample, whereby an elevated level of ORP 150 relative to normal is indicative of an increased risk of heart disease of claim 1; wherein heart disease is the result of heart failure, chronic heart failure, coronary artery disease, ischaemic cardiomyopathy, myocardial infarction atherosclerosis, ischaemic stroke, aortic aneurysm, or peripheral vascular disease of claim 2; wherein the bodily fluid is plasma of claim 3; wherein the method is **in the format of** an immunoassay of claim 4; wherein the immunoassay is a lateral flow immunoassay of claim 5; wherein the immunoassay is a flow-through immunoassay of claim 6; wherein the antibody is a monoclonal antibody of claim 7; the method of claim 1, which comprises **detecting a natriuretic peptide** in the bodily fluid sample whereby an elevated level of the natriuretic peptide is indicative of an increased risk of heart disease of claim 8; wherein the natriuretic peptide is **brain natriuretic peptide (BNP)** or **N-terminal pro-brain natriuretic peptide (N-BNP)** of claim 10; wherein the method is **in the form of** an immunoassay of claim 11; wherein the immunoassay is a lateral flow immunoassay of claim 12; wherein the immunoassay is a flow-through immunoassay of claim 13; wherein the bodily fluid is plasma of claim 14; wherein the mammalian subject is human of claim 15; wherein the level of ORP 150 is monitored periodically of claim 16; and wherein the level of the **natriuretic peptide** is monitored periodically for the same reasons as set forth in the Office Action mailed on 11/16/2006.

Applicant's arguments filed on 05/21/2007 have been fully considered, but are not found persuasive.

Applicant argues that claims 1 and 8 have been amended to make those rejections moot. Applicant argues that claim1 and 8 are enabled by the specification because the specification provides extensive description of natriuretic polypeptides and methods of assaying them, along with two working examples wherein ORP150 and a natriuretic polypeptide are used in assay for various heart diseases.

It is the Examiner's position that the specification has provided two working examples of using ORP150 and N-BNP in assays for heart disease. There are no other examples in the specification showing that ORP150 and any other natriuretic polypeptide other than N-BNP will actually work in the claimed invention. Therefore, the specification is not enabled for the use of any natriuretic polypeptide. The specification is also not enabled for the use of any "N-BNP" or "BNP" polypeptide without reference to a specific polypeptide sequence for the recited "N-BNP' or "BNP."

Further, the amendment filed on 05/21/2007 includes the recitation of "in the format of" in claim 4 and "in the form of" in claim 11. There is inadequate written description for the method in the specification that is "in the format of" and/or "in the form of" an immunoassay. The terms "form" and "format" are not referring to types of methods for detection. The terms are used in the specification to describe type of immunoassays, such as sandwich immunoassays and

competitive immunoassays. The terms "in the format of" and "in the form of" are not used to distinguish immunoassays from other methods of detection, as recited in the claims. Therefore, there s inadequate written description for a method "in the form of" or "in the format of " an immunoassay.

In claim 1 of the amendment filed on 05/21/2007, "an immunoreactive fragment thereof" is recited. The specification does not disclose a method of detecting an immunoreactive fragment of ORP150 for use in the claimed method. There is no guidance in the specification as to which fragments would be immunoreactive. Without guidance or working examples of immunoreactive fragments of ORP150, it would be highly unpredictable which fragments could be used in the claimed invention.

Further, the amendment filed on 05/21/2007 also includes the recitation of "in the format of" in claim 4 and "in the form of" in claim 11. There is inadequate enablement for the method in the specification that is "in the format of" and/or "in the form of" an immunoassay. The terms "form" and "format" are not referring to types of methods for detection. The terms are used in the specification to distinguish types of immunoassays, such as sandwich immunoassays and competitive immunoassays. The terms "in the format of" and "in the form of" are not used to distinguish immunoassays from other methods of detection, as recited in the claims. Therefore, there s inadequate enablement for a method "in the form of" or "in the format of" an immunoassay.

10. Claims 1-8 and 10-17 stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Applicant is in possession of: a method for detecting tissue hypoxia in a mammalian subject comprising contacting a bodily fluid sample of said subject with anti-ORP 150 antibody and determining the level of ORP 150 protein (SEQ ID NO:2) in said bodily fluid sample, including plasma, whereby an elevated level of ORP 150 relative to normal is indicative of an increased risk of heart disease that is the result of heart failure, chronic heart failure, coronary artery disease, ischaemic cardiomyopathy, myocardial infarction atherosclerosis, ischaemic stroke, aortic aneurysm or peripheral vascular disease; the method using lateral flow immunoassay or flow-through immunoassay with monoclonal antibodies specific for ORP 150; the method for detecting tissue hypoxia in a mammalian subject further comprising detection the BNP or N-BNP second marker in a bodily fluid sample of a mammal, including plasma, whereby an elevated level of the second marker is indicative of heart disease using lateral-flow immunoassay or flow through immunoassay; and the method for detecting tissue hypoxia in a mammalian subject wherein ORP 150 and/or the second marker are monitored periodically.

Applicant is not in possession of: a method for detecting tissue hypoxia in a mammalian subject by contacting a bodily fluid sample with an antibody specific for an oxygen related protein 150 (ORP 150) comprising SEQ ID NO: 2 **or an immunoreactive fragment thereof** in

order to detect the level of ORP 150 in the bodily fluid sample, whereby an elevated level of ORP 150 relative to normal is indicative of an increased risk of heart disease of claim 1; wherein heart disease is the result of heart failure, chronic heart failure, coronary artery disease, ischaemic cardiomyopathy, myocardial infarction atherosclerosis, ischaemic stroke, aortic aneurysm, or peripheral vascular disease of claim 2; wherein the bodily fluid is plasma of claim 3; wherein the method is **in the format of** an immunoassay of claim 4; wherein the immunoassay is a lateral flow immunoassay of claim 5; wherein the immunoassay is a flow-through immunoassay of claim 6; wherein the antibody is a monoclonal antibody of claim 7; the method of claim 1, which comprises **detecting a natriuretic peptide** in the bodily fluid sample whereby an elevated level of the natriuretic peptide is indicative of an increased risk of heart disease of claim 8; wherein the natriuretic peptide is **brain natriuretic peptide (BNP)** or **N-terminal pro-brain natriuretic peptide (N-BNP)** of claim 10; wherein the method is **in the form of** an immunoassay of claim 11; wherein the immunoassay is a lateral flow immunoassay of claim 12; wherein the immunoassay is a flow-through immunoassay of claim 13; wherein the bodily fluid is plasma of claim 14; wherein the mammalian subject is human of claim 15; wherein the level of ORP 150 is monitored periodically of claim 16; and wherein the level of the **natriuretic peptide** is monitored periodically for the same reasons as set forth in the Office Action mailed on 11/16/2006.

Applicant's arguments filed on 05/21/2007 have been fully considered, but are not found persuasive.

Applicant argues that claim 1 has been amended to provide adequate written description for the 'ORP150 polypeptide'. Applicant further argues that there is sufficient written description for the 'natriuretic peptide' genus because applicants have reduced to practice at least one assay for N-BNP. Although the specification does not provide sequences for the natriuretic species described, publication citations are incorporated by reference in their entireties, thus providing adequate description and sufficient detail about natriuretic peptide species.

It is the Examiner's position that the reduction to practice of an assay for N-BNP is not sufficient written description for an assay for genus of any and all natriuretic peptides. BNP and N-BNP are not described in adequate detail in the specification, such as by a specific sequence identifier. Applicant asserts that the publications describing the natriuretic species are incorporated by reference. However, the incorporation by reference of the sequences for N-BNP and BNP requires a sequence listing, CRF and statement that the sequence listing and CRF are the same including the additional sequences for the sequences for BNP and N-BNP to be properly incorporated. Further, even if the sequences for N-BNP and BNP are properly incorporated, they do not provide adequate written description for the genus of all natriuretic peptides, including those that are as yet undiscovered because the specification does not provide any guidance as to which structural features of natriuretic peptides are important for use in the claimed method.

In claim 1 of the amendment filed on 05/21/2007, "an immunoreactive fragment thereof" is recited. The specification does not describe a method of detecting an immunoreactive

fragment of ORP150 for use in the claimed method. There is no guidance in the specification as to which fragments would be immunoreactive. Without guidance or working examples of immunoreactive fragments of ORP150, one of ordinary skill in the art would not be able to distinguish immunoreactive fragments for use in the claimed method from all other fragments.

Further, the amendment filed on 05/21/2007 includes the recitation of "in the format of" in claim 4 and "in the form of" in claim 11. There is inadequate written description for the method in the specification that is "in the format of" and/or "in the form of" an immunoassay. The terms "form" and "format" are not referring to types of methods for detection. The terms are used in the specification to describe type of immunoassays, such as sandwich immunoassays and competitive immunoassays. The terms "in the format of" and "in the form of" are not used to distinguish immunoassays from other methods of detection, as recited in the claims. Therefore, there s inadequate written description for a method "in the form of" or "in the format of " an immunoassay.

Claim Rejections - 35 USC § 103

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

> (c) Subject matter developed by another person, which qualifies as prior art only under one or more subsections (e), (f) and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

12. Claims 1-4, 7-8, 10-11 and 14-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,948,637 in view of Hall et al. (PTO 1449 filed 6/18/2004, Reference AG) for the same reasons as set forth in the Office Action mailed on 11/16/2006.

Applicant's arguments filed on 05/21/2007 have been fully considered, but are not found persuasive.

Applicant argues that the '637 patent does not teach or suggest a method for detecting tissue hypoxia in a mammalian subject by contacting a bodily fluid sample with an antibody specific for an oxygen related protein 150 (ORP150) comprising SEQ ID NO:2 or an immunoreactive fragment thereof in order to detect the level of ORP150 in a bodily fluid sample, whereby an elevated level of ORP150 relative to normal is indicative of an increased risk of heart disease. Applicant argues that Hall et al. is relied on by the Examiner as teaching the detection of natriuretic peptide, particularly in combination with other diagnostic tests. One of ordinary skill in the art, applicant asserts, would not have turned to literature regarding detection of natriuretic peptides to determine how to adapt as assay for ORP150 detecting in bodily fluids. Applicant further asserts that the Examiner has misconstrued the teachings of Hall in that Hall et al. does not teach or suggest the desirability of combining the natriuretic peptide measurements with any other diagnostic that might be developed later on, only current methods.

It is the Examiner's position that instant claim 1-4, 7-10 and 14-17 are unpatentable over the 637' patent in view of the Hall et al. reference because each limitation is taught between the two references. The '637 patent teaches the detection of ORP150 comprising SEQ ID NO:2 which is induced under hypoxic conditions to diagnose ischemic disease and Hall et al. teaches the detection of natriuretic peptides in the diagnosis and management of heart failure patients. The idea of an assay combining detection of the two flows logically from their having been individually taught in the prior art. Further, Hall et al. explicitly suggests combining the natriuretic peptide measurements with other diagnostics.

Applicant's assertion that the Examiner has misconstrued Hall et al. because Hall et al. does not teach that the natriuretic peptide measurements could be combined with any other diagnostic that might be developed later on is without merit. Hall et al. teaches that the natriuretic peptide measurement can be combined with other diagnostics and there is no requirement that Hall et al. explicitly teach any further motivation. It would be obvious to one of ordinary skill in the art at the time the invention was made to combine the determination of ORP 150 (637' patent) with the determinations of other diagnostic markers, such as natriuretic peptides, for diagnosis of heart failure (Hall et al.), in view of the suggestion in Hall et al. to combine tests to improve diagnostic performance. It is prima facie obvious to combine two compositions each of which is taught by prior art to be useful for same purpose in order to form third composition that is to be used for the very same purpose. The idea of combining them flows logically from their having been individually taught in prior art. In re Kerkhoven, 205 USPQ 1069, CCPA 1980. See MPEP 2144.06.

13. Claims 4-5 and 11-12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,948,637 in view of Hall et al. (PTO 1449 filed 6/18/2004, Reference AG) as applied to Claims 1-4, 7-11 and 14-17 above, and further in view of Karl et al. (PTO-1449 filed 6/18/2004, Reference AJ) for the same reasons as set forth in the Office Action mailed on 11/16/2006.

Applicant's arguments filed on 05/21/2007 have been fully considered, but are not found persuasive.

Applicants argue that Karl et al. does not remedy the deficiency of the '637 patent in view of Hall et al.

Examiner's position on the teachings of the 637' patent and Hall et al. has been discussed *supra*. It would also be obvious to one of ordinary skill in the art at the time the invention was made to combine detection of ORP 150 protein, N-BNP and BNP in a patient's bodily fluid, such as plasma, using antibodies to the polypeptides in a lateral flow immunoassay (Karl et al.) to detect increased risk of heart disease because lateral flow immunoassays, such as sandwich format immunoassays, are efficient " highly sensitive" and "specific" (In particular, page 177, abstract).

14. Claims 4, 6, 11 and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,948,637 in view of Hall et al. (PTO 1449 filed 6/18/2004, Reference AG) as

applied to Claims 1-4, 7-11 and 14-17 above, and further in view of May et al. (PTO-892, Reference A) for the same reasons as set forth in the Office Action mailed on 11/16/2006.

Applicant's arguments filed on 05/21/2007 have been fully considered, but are not found persuasive.

Applicants argue that Karl et al. does not remedy the deficiency of the '637 patent in view of May et al.

Examiner's position on the teachings of the 637' patent and Hall et al. has been discussed *supra*. It would also be obvious to one of ordinary skill in the art at the time the invention was made to combine detection of ORP 150 protein, N-BNP and BNP in a patient's bodily fluid, such as plasma, using antibodies to the polypeptides in a flow-thorough immunoassay (May et al.) to detect increased risk of heart disease because the May et al. reference teaches that such a device is optimal as it is specific, reliable, quick, convenient, commercially available and suitable for home-use because of the lack of requisite skill and ease of obtaining a bodily fluid sample for use (In particular column 1 lines 10-45 and lines 64-67 and column 2, lines 1-2).

15. The following new ground of rejection is necessitated by the amendment filed on 05/21/2007.

16. Claims 1-8 and 10-17 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a New Matter rejection.

The phrases "an immunoreactive fragment thereof" in claim 1, "in the format of an immunoassay" in claim 4 and "in the form of an immunoassay" in claim 11 represent a departure from the specification and the claims as originally filed.

Applicant's amendment filed 05/21/2007 points to Figures 11, 12, 14 and 15 of the specification and related examples for the newly added limitations. However, the specification does not provide a clear support of "an immunoreactive fragment thereof" in claim 1, "in the format of an immunoassay" in claim 4 and "in the form of an immunoassay" of claim 11. The instant claims now recite limitations which were not clearly disclosed in the specification and recited in the claims as originally filed.

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

18. No claim is allowed.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nora M. Rooney whose telephone number is (571) 272-9937. The examiner can normally be reached Monday through Friday from 8:30 am to 5:00 pm. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on (571) 272-0841. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

July 2, 2007

Nora M. Rooney, M.S., J.D.

Patent Examiner

Technology Center 1600

CHRISTINA CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600